

Title (en)  
Measuring method and apparatus using a shearing interferometer, exposure method and apparatus using the same, and device manufacturing method

Title (de)  
Ein Shearing-Interferometer benutzendes Messverfahren und zugehöriger Apparat, ein den Apparat benutzendes Belichtungsverfahren und zugehöriger Apparat sowie Verfahren zur Herstellung eines Artikels

Title (fr)  
Méthode de mesure et appareil utilisant un interféromètre à décalage, méthode et dispositif d'exposition utilisant ledit appareil, et procédé pour la fabrication d'un dispositif

Publication  
**EP 1536287 A3 20070912 (EN)**

Application  
**EP 04028148 A 20041126**

Priority  
JP 2003398722 A 20031128

Abstract (en)  
[origin: EP1536287A2] A measuring apparatus includes a first mask having a pinhole for generating a spherical wave as measuring light, a second mask provided subsequent to the first mask in a light traveling direction, the second mask having a selecting window that allows the measuring light that has passed a target optical system to transmit through the selecting window, and a two-dimensional light divider, located between the first and second masks, for two-dimensionally dividing light, wherein the measuring apparatus calculating optical performance of the target optical system from an interference fringe formed by the measuring light that has passed the selecting window.

IPC 8 full level  
**G01M 11/02** (2006.01); **G03F 7/20** (2006.01); **G01B 9/02** (2006.01); **H01L 21/027** (2006.01)

CPC (source: EP US)  
**G03F 7/706** (2013.01 - EP US)

Citation (search report)

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- [Y] WO 0212826 A1 20020214 - UNIV CALIFORNIA [US], et al
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- [DX] NAULLEAU P P ET AL: "EXTREME ULTRAVIOLET CARRIER-FREQUENCY SHEARING INTERFEROMETRY OF A LITHOGRAPHIC FOUR-MIRROR OPTICAL SYSTEM", JOURNAL OF VACUUM SCIENCE AND TECHNOLOGY: PART B, AVS / AIP, MELVILLE, NEW YORK, NY, US, vol. 18, no. 6, 30 May 2000 (2000-05-30), pages 2939 - 2943, XP001040947, ISSN: 1071-1023
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US8351050B2

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LU MC NL PL PT RO SE SI SK TR

Designated extension state (EPC)  
AL HR LT LV MK YU

DOCDB simple family (publication)  
**EP 1536287 A2 20050601**; **EP 1536287 A3 20070912**; **EP 1536287 B1 20110202**; DE 602004031279 D1 20110317; JP 2005159213 A 20050616; US 2005117170 A1 20050602; US 7352475 B2 20080401

DOCDB simple family (application)  
**EP 04028148 A 20041126**; DE 602004031279 T 20041126; JP 2003398722 A 20031128; US 99431404 A 20041123